UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,049	06/21/2001	Kie Y. Ahn	MI22-1738	8608

21567 7590 12/13/2002

WELLS ST. JOHN ROBERTS GREGORY & MATKIN P.S.
601 W. FIRST AVENUE
SUITE 1300
SPOKANE, WA 99201-3828

EXAMINER
MALDONADO, JULIO J

ART UNIT	PAPER NUMBER
2823	9

DATE MAILED: 12/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/887,049	AHN, KIE Y.
	Examiner	Art Unit
	Julio J. Maldonado	2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *38-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *50-62* is/are allowed.

6)☒ Claim(s) *35-37,39-49,63 and 64* is/are rejected.

7)☒ Claim(s) *39* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. The non-final rejection as set forth in paper No. 5 is withdrawn in response to applicants' amendments and response.

2. A new 103(a) rejection is made as set forth in this Office Action.

3. Claims 63 and 64 are newly added. Thus, claims 35-64 are pending in this application.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 35-37, 39-49, 63 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (U.S. 5,148,260) in view of Val (U.S. 5,323,533).

In reference to claims 35-37, 39, 40, 42, 43, 45, 47 and 48, Inoue et al. (Figs.1A-1F) in a related art to the formation of an air bridge structure teach an integrated circuitry comprising a substrate (11, 13) having an outer surface; a pair of upstanding, spaced apart conductive terminal members (14) disposed over the substrate outer surface; a copper comprising layer of material (17) operably connected with and suspended above the outer surface between the terminal members (14), the copper comprising layer (17) having a thickness of between about 100 to 200 nanometers; a conductive layer (20) of material disposed and operably connected with the copper-comprising layer of material (17), the conductive layer comprising conductive material

selected from the group consisting of copper, gold, nickel, cobalt and iron, wherein the copper comprising layer (17) and the conductive layer comprise an inner conductive core spaced from and suspended over the outer surface (column 3, line 9 – column 5, line 25).

Inoue et al. fail to teach a parylene layer surrounding a substantial portion of the inner conductive core; and an outer conductive sheath surrounding a substantial portion of the polymer dielectric layer. However, Val (Figs.2a-2c) teaches a coaxial line structure including a parylene layer (21) surrounding a substantial portion of an inner conductive core (F); and an outer conductive sheath (24) surrounding a substantial portion of the polymer dielectric layer, wherein the outer conductive sheath comprises aluminum and said sheath is not formed on the outer surface (column2, line 19 – column 3, line 23). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to form the polymer dielectric layer and the outer conductive sheath as taught by Val in the air bridge structure of Inoue et al., since this would result in a coaxial line with reduced signal reflection (column 1, lines 18 – 26) and having a dielectric layer with resistance to temperature and frequency changes (column 2, lines 44 – 57).

In reference to claim 41 and 46, the combined teachings of Inoue et al. and Val teach that the polymer dielectric layer comprises parylene but fail to teach the relative dielectric constant of the polymer dielectric layer is about 2.6. It would have been obvious to one of ordinary skill in the art at the time of the invention was made that the polymer dielectric layer of Inoue et al. and Val would have a relative dielectric constant

of 2.6 as taught by the claimed invention, since the material used by Inoue et al. and Val are those of the claimed invention.

In reference to claims 44 and 49, Inoue et al. fail to teach using a material selected from a group consisting of nickel, cobalt and iron. However, Val teaches a coaxial structure including a conductive layer consisting of a material comprising nickel and chrome (column 3, lines 6 – 23). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to form the polymer dielectric layer and the outer conductive sheath as taught by Val in the air bridge structure of Inoue et al., since this would result in a coaxial line with reduced signal reflection (column 1, lines 18 – 26) and having a dielectric layer with resistance to temperature and frequency changes (column 2, lines 44 – 57). Also, it would have been obvious to one of ordinary skill in the art to use nickel and chrome as conductive materials as taught by Val in the air bridge structure of Inoue et al., since these materials are well known in the art and its selection involves common knowledge in the art. Furthermore, the specification contains no disclosure of either the critical nature of the claimed materials or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen conductive materials or upon another material recited in a claim, the applicant must show that the particular conductive materials are critical.

In reference to claims 63 and 64, the combined teachings of Inoue et al. and Val show that the inner conductive core includes at least two different conductive materials (Inoue et al., column 3, line 9 – column 5, line 25)

Allowable Subject Matter

6. Claim 39 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 50 – 62 are allowed.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record, Inoue et al. to U.S. 5,148,260 in a related art to the formation of an air bridge structure teach an integrated circuitry comprising a substrate (11, 13) having an outer surface; a pair of upstanding, spaced apart conductive terminal members (14) disposed over the substrate outer surface; a copper comprising layer of material (17) operably connected with and suspended above the outer surface between the terminal members (14), the copper comprising layer (17) having a thickness of between about 100 to 200 nanometers; a conductive layer (20) of material disposed and operably connected with the copper-comprising layer of material (17), the conductive layer comprising conductive material selected from the group consisting of copper, gold, nickel, cobalt and iron, wherein the copper comprising layer (17) and the conductive layer comprise an inner conductive core spaced from and suspended over the outer surface (Figs.1A-1F and column 3, line 9 – column 5, line 25).

However, Inoue et al. fail to teach forming a dielectric layer and an outer conductive sheath.

Val to U.S. 5,323,533 teaches a coaxial line structure including a parylene layer (21) surrounding a substantial portion of an inner conductive core (F); and an outer conductive sheath (24) surrounding a substantial portion of the polymer dielectric layer, wherein the outer conductive sheath comprises aluminum and said sheath is not formed on the outer surface (Figs.2a-2c and column2, line 19 – column 3, line 23).

However, Val neither teaches nor suggests that the outer conductive sheath leaves some void space between the outer conductive sheath and the outer surface.

Response to Arguments

9. Applicant's arguments with respect to claims 38-62 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

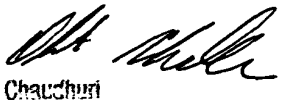
10. Papers related to this application may be submitted directly to Art Unit 2823 by facsimile transmission. Papers should be faxed to Art Unit 2823 via the Art Unit 2823 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2823 Fax Center number is **(703) 305-3432**. The Art Unit 2823 Fax Center is to be used only for papers related to Art Unit 2823 applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Julio J. Maldonado** at **(703) 306-0098** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via julio.maldonado@uspto.gov. If attempts to reach the examiner by telephone

are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (703) 306-2794.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Group 2800 Receptionist** at **(703) 308-0956**.

Julio J. Maldonado
Patent Examiner
Art Unit 2823
703-306-0098
julio.maldonado@uspto.gov



Olik Chaudhuri
Supervisory Patent Examiner
Technology Center 2800